

RD27270

CLAIMS

1. (Currently Amended) An apparatus for the rapid screening of potential reactants, catalysts or reaction conditions, the apparatus comprising:

a reaction substrate comprising a plurality of substrate reservoirs, said reaction substrate having a first temperature; and

a head plate positioned to provide a common sealed pressurized headspace adjacent to said substrate reservoirs, said head plate having a second temperature and said sealed pressurized headspace having an adjustable pressure in a range of between about 1 atmosphere and about 50 atmosphere,

wherein a reaction occurs within each substrate reservoir, and wherein said apparatus is structurally capable of being operated at temperatures up to at least about 200°C and at pressures from about 10 atmosphere up to at least about 50 atmosphere.

2. (Original) The apparatus of claim 1, further comprising a controller in communication with said reaction substrate and said head plate, wherein said controller maintains said reaction substrate at said first temperature and said head plate at said second temperature.

3. (Original) The apparatus of claim 1, further comprising:  
a thermal unit in communication with said reaction substrate and  
a controller in communication with said reaction substrate and said head plate, wherein said controller adjusts the temperature of said thermal unit to maintain said reaction substrate at said first temperature and wherein said controller adjusts the temperature of said head plate to maintain said head plate at said second temperature.

4. (Previously Presented) The apparatus of claim 1, further comprising a gas source in communication with said sealed pressurized headspace, wherein said gas source includes at least one gas.

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